

# Lesson 2

## Sexual Reproduction

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# الجمعة القادمة امتحان

- Reproduction
- Plant Support
- Plant Hormones

تسبب ازمة القادة  
(الخمس)



# Flowering Plants

Kingdom: Plantae

(mosses)  
Bryophyta

→ Ferns

معراة البذور  
Gymnospermae

مغطاة البذور  
Angiospermae ✓✓✓

Vascular  
System

X

✓

X

✓

Flowering

X

X

X

✓

Fruiting

X

X

✓

Seeded

X

X

Ex:

Riccia - Funaria - Adiantum  
Polypodium

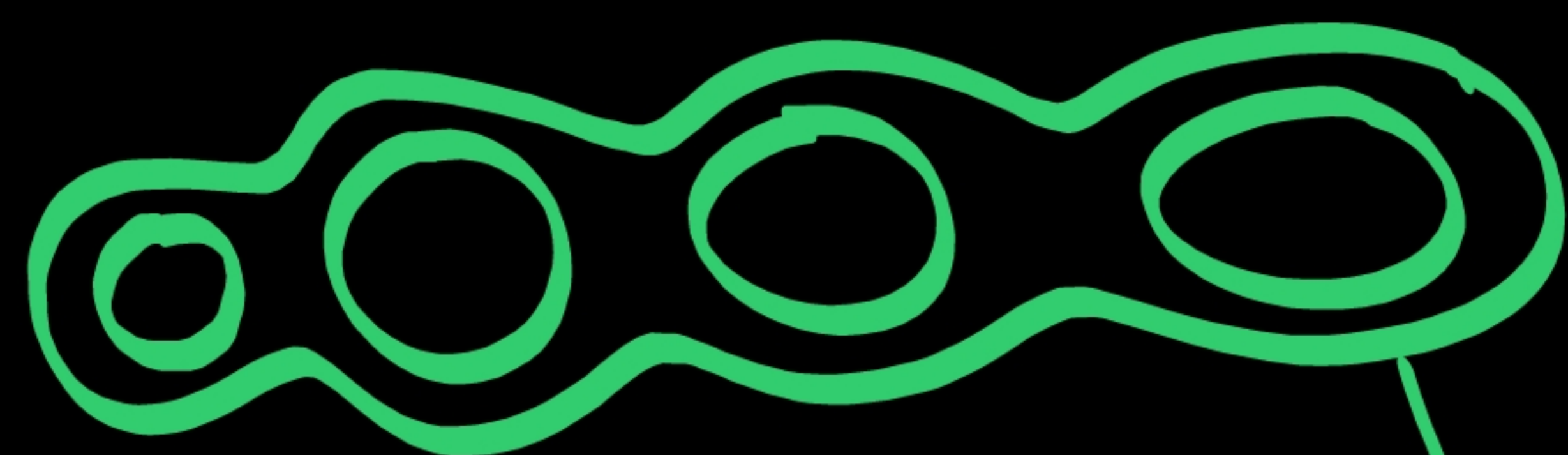
✓  
Pinus

Monocots - Dicots



Fig

Pea Pod



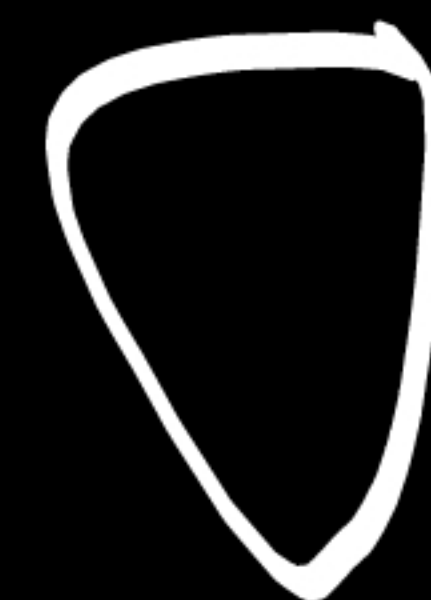
Pericarp

"fruit wall"

Seeds are  
enclosed within Pericarp

Angiospermae

Gymnospermae



Seeds

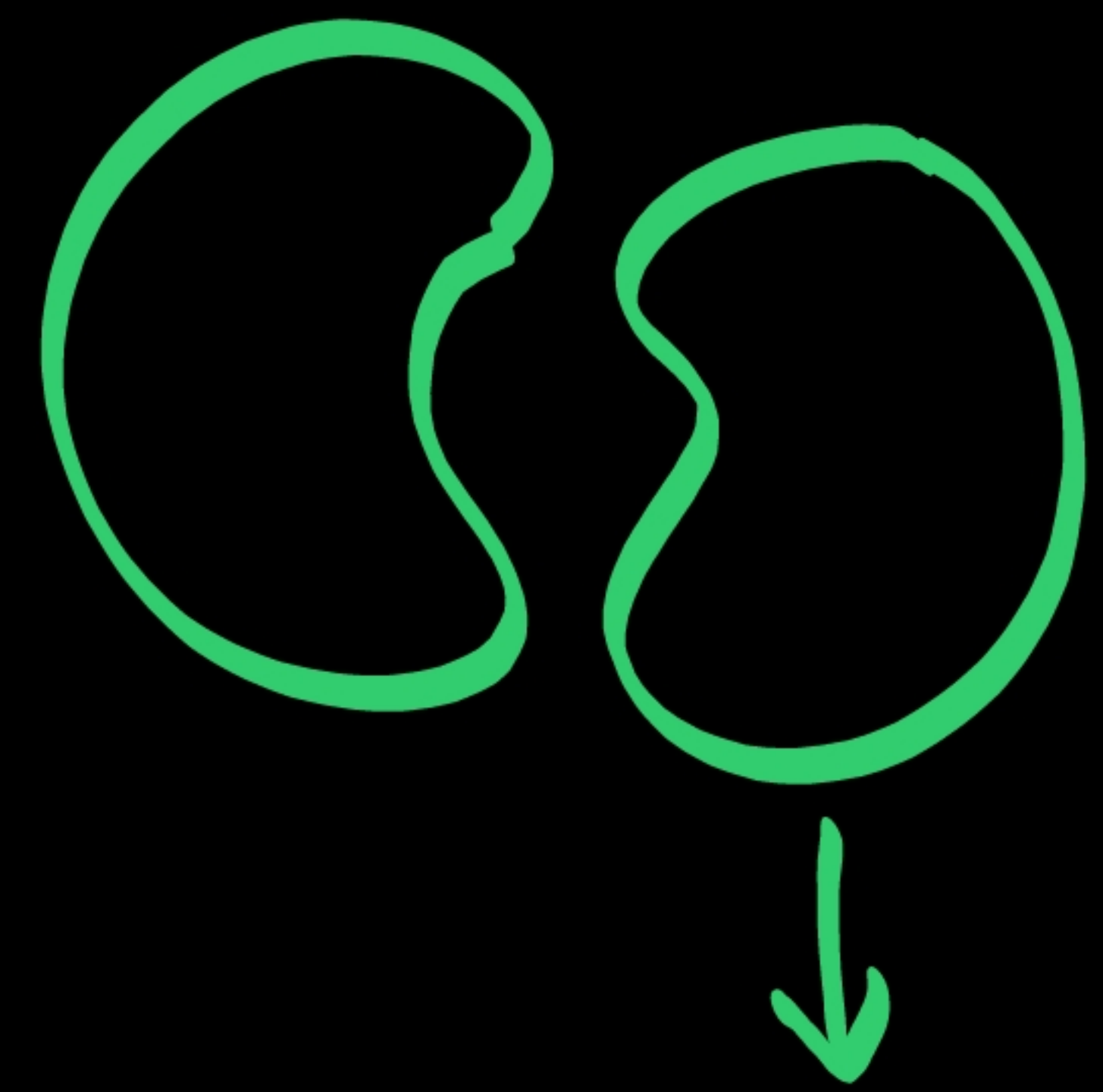


Are not enclosed within

Pericarp



# Legumes



Cotyledon

(DiCotyledenous)

① DiCot

# Angiospermae



Cotyledon

② Monocot

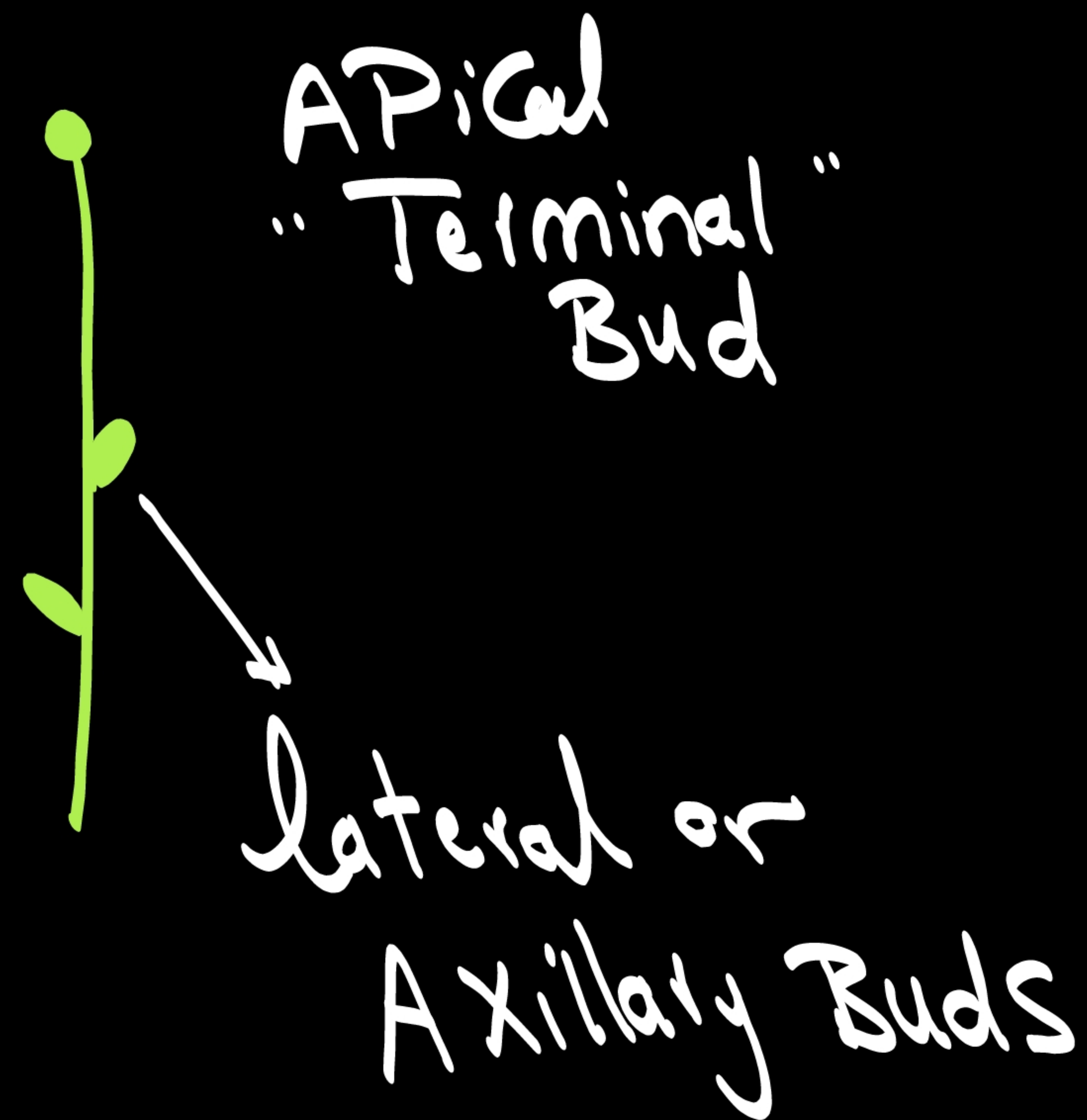


## Flower:

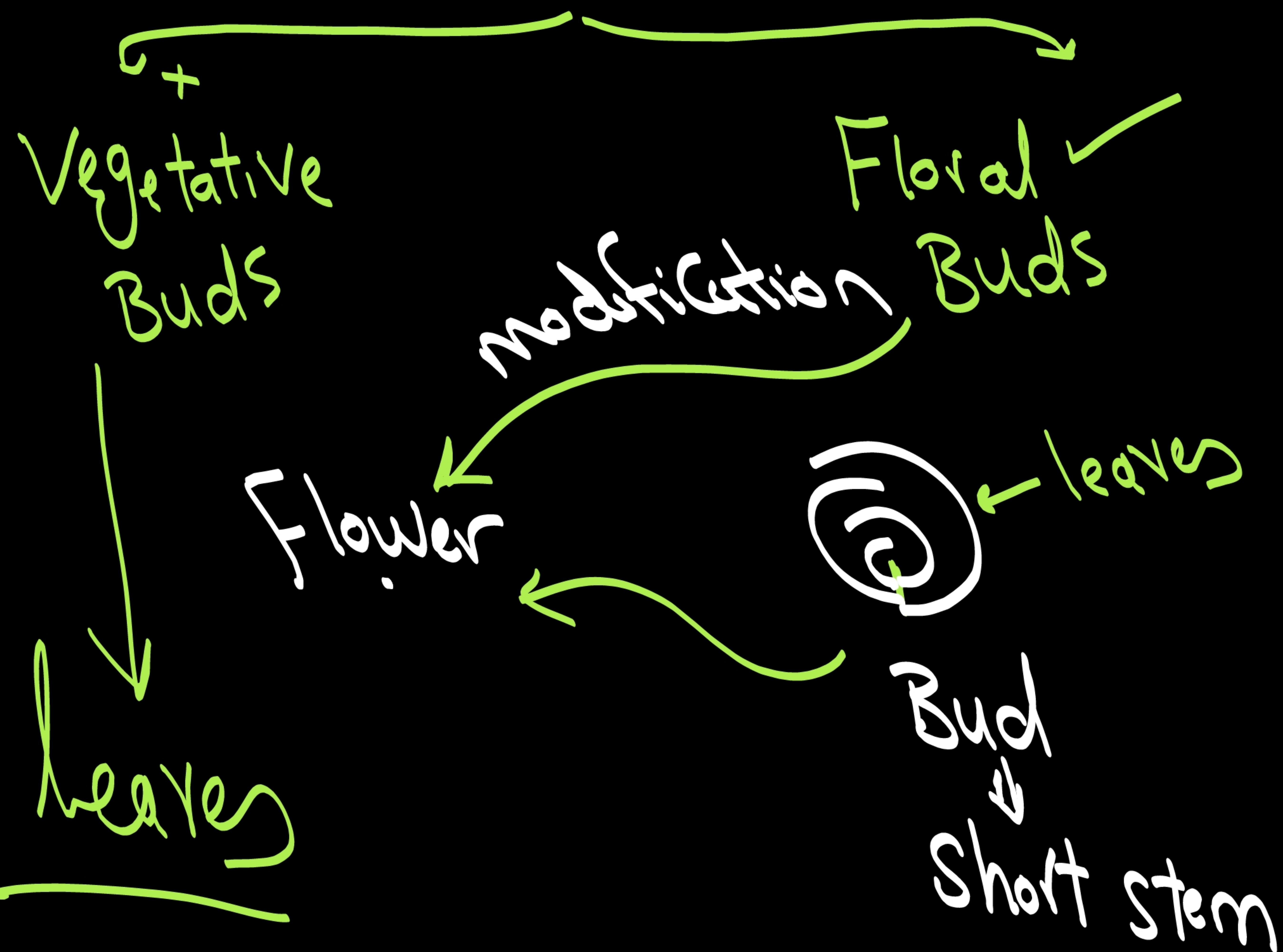
- ↳ Sexual reproductive organ.
- ↳ Short stem, its leaves are modified into floral whorls



# Buds



## Functions

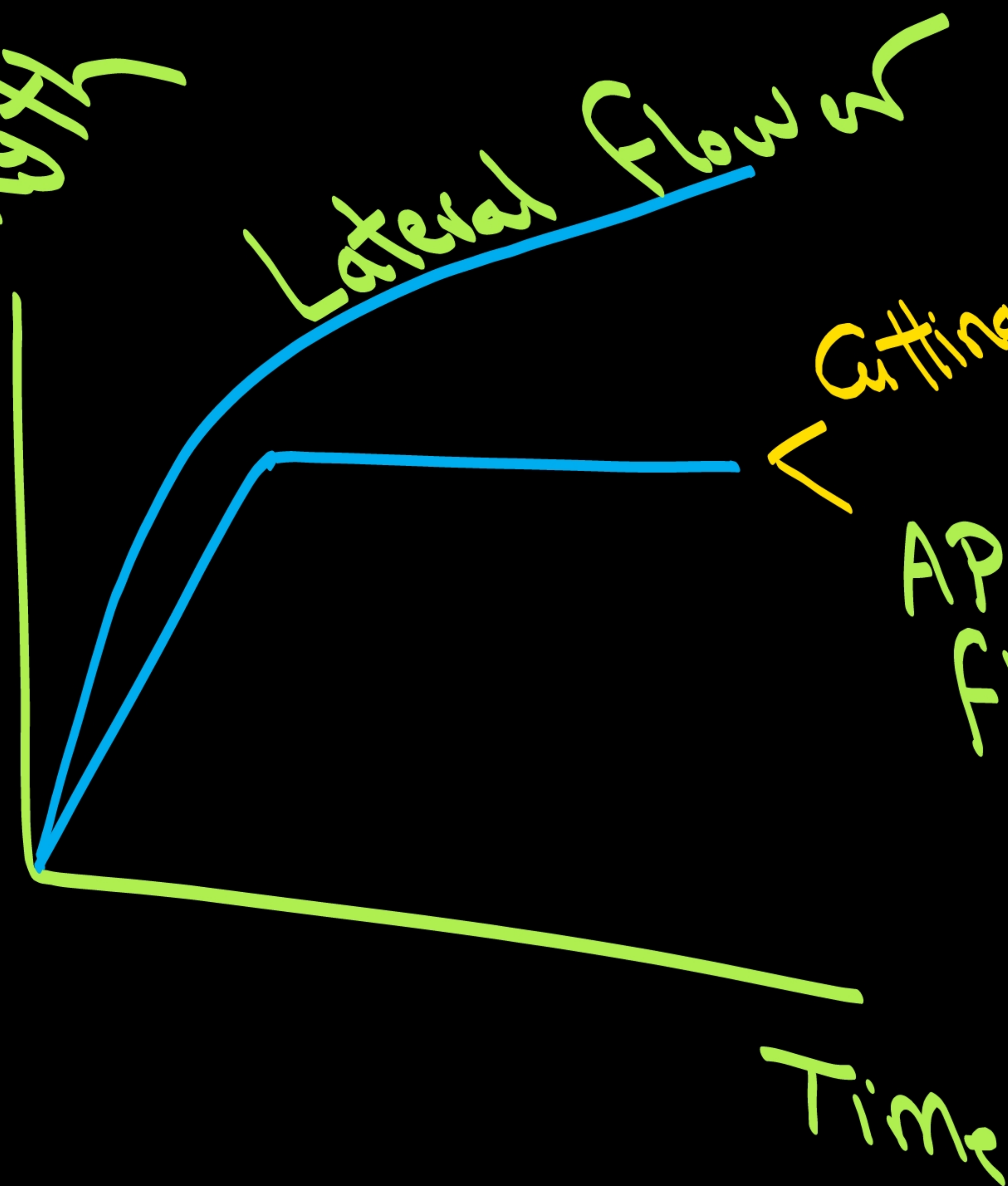




Flower  
 Apical bud transformed into flower length

① Apical Flower  
 Ex: Tulip

Stop stem elongation



Apical Bud still present

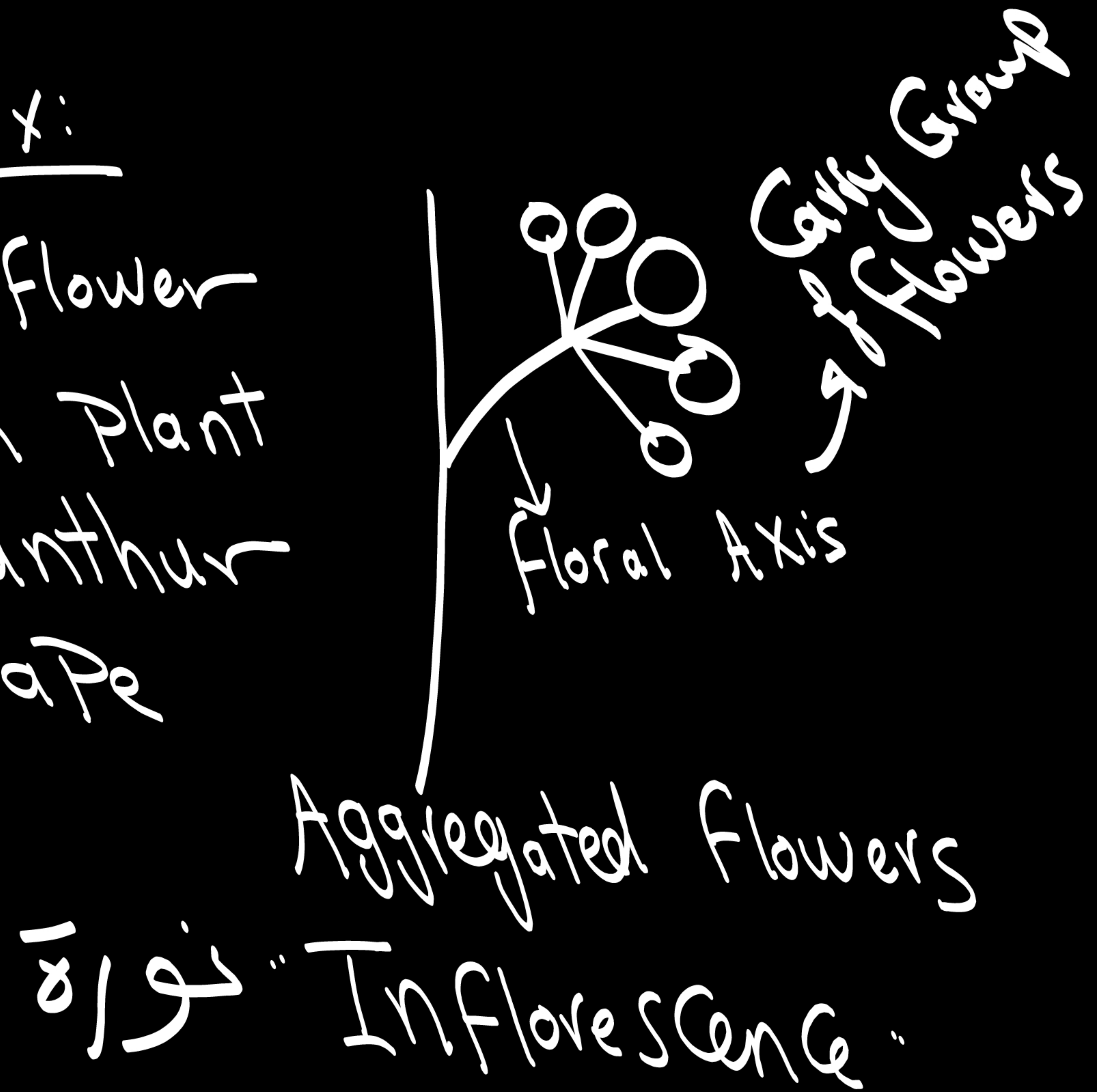
Lateral flower  
 Ex: Petunia  
 Doesn't stop stem elongation



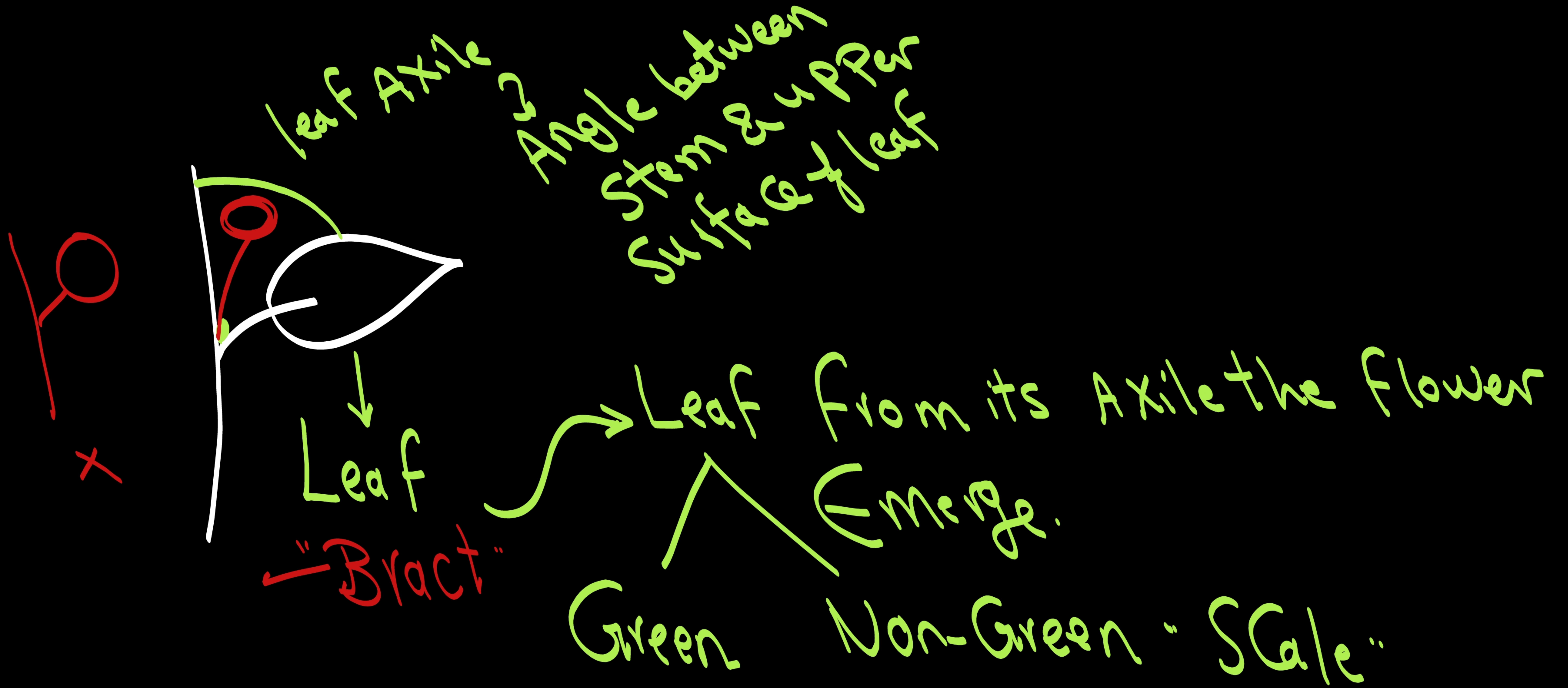


Ex:

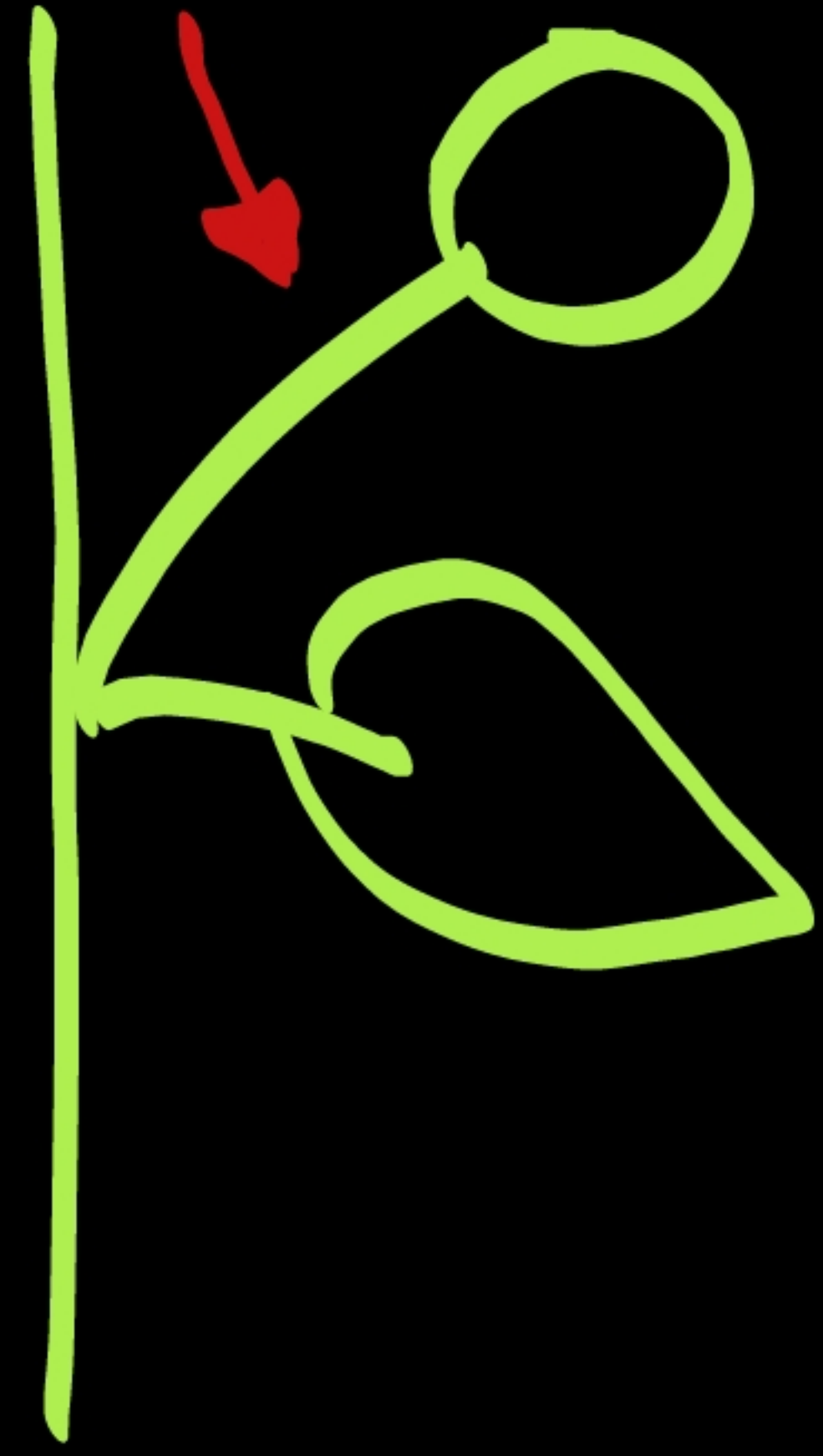
- Sun flower
- Bean plant
- Maranthus
- Grape



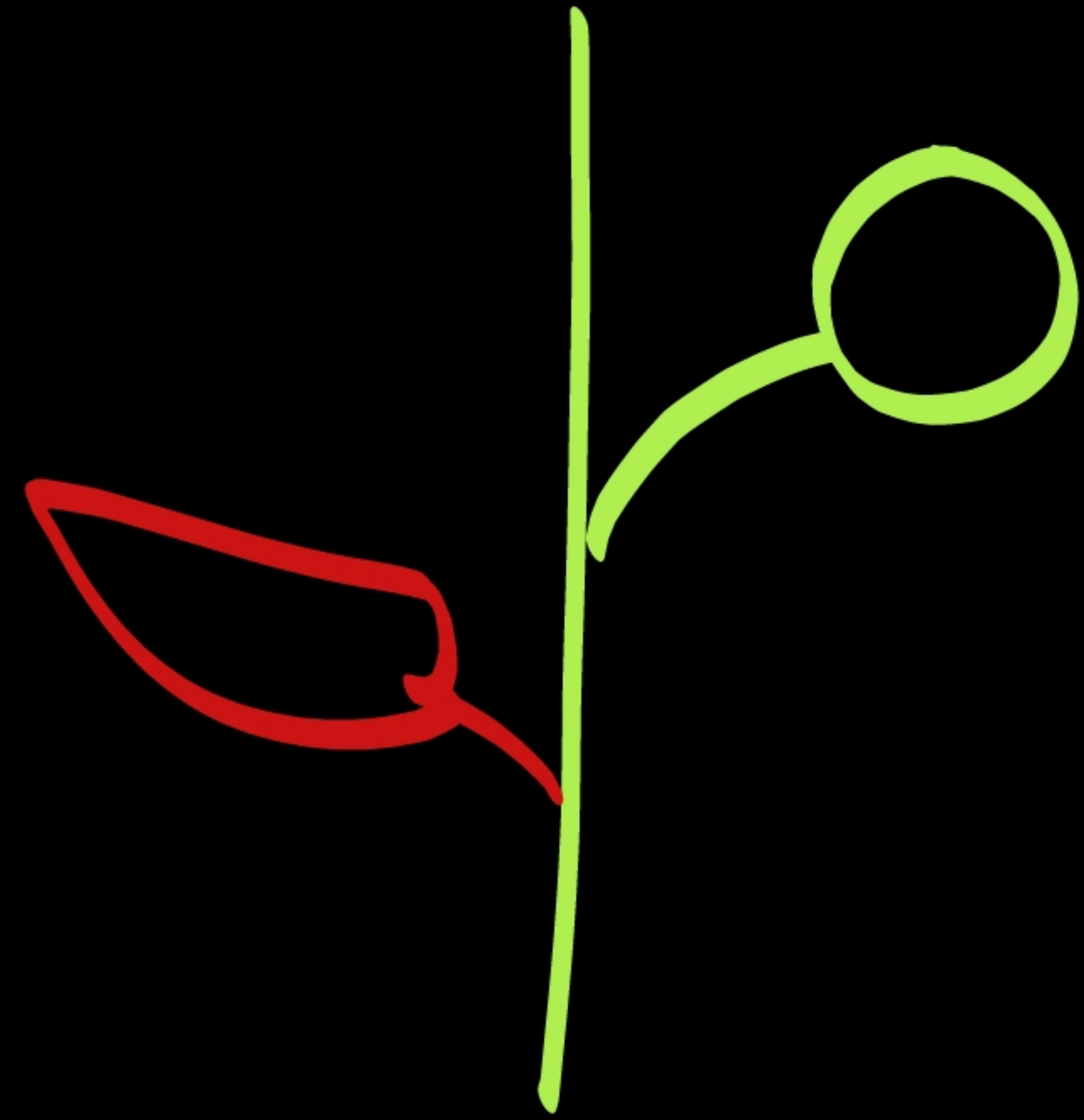




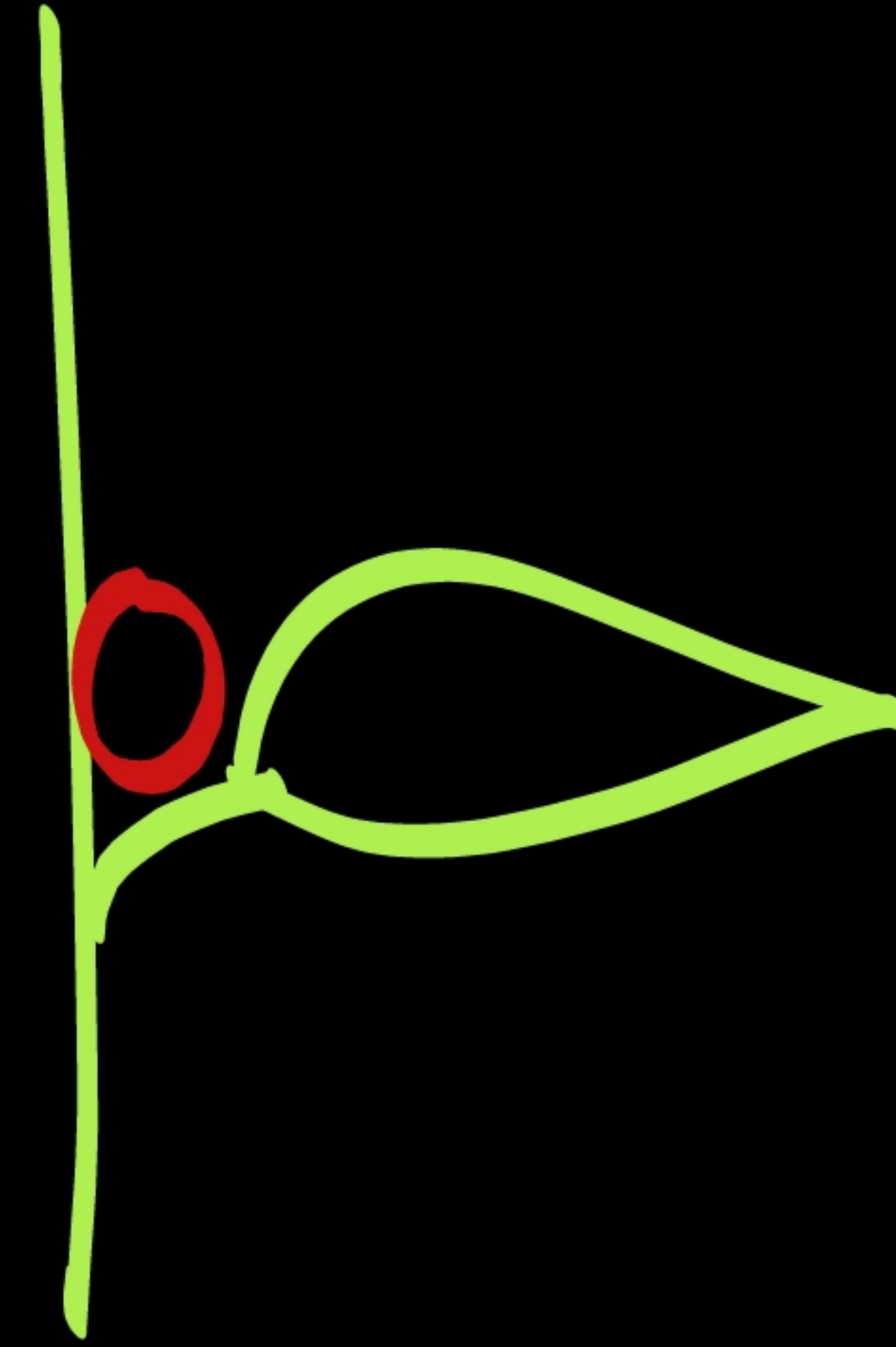




- Stalked
- ✓ Bract



- Stalked
- Without Bract



- Sessile
- ✓ Bract



- ✗
- Sessile
- Without Bract







1 Calyx: → outermost whorl.

- units: Sepal

- Function:

- ① Protection of floral whorls  
"Before Blooming"
- ② Share in Photosynthesis

Wind  
Rain  
Drought



## ② Corolla

unit: Petals → Bright Colors

Fuction:

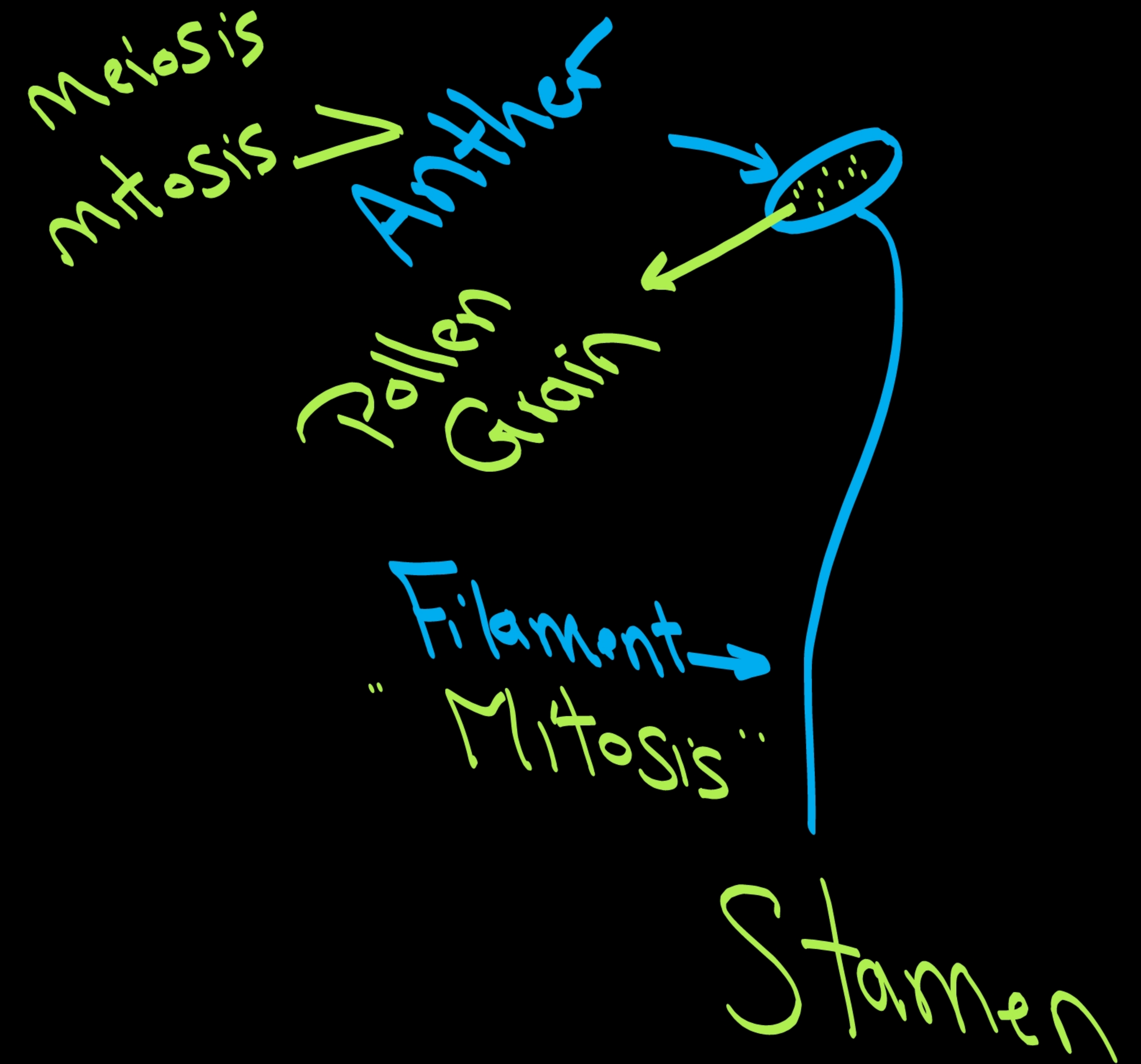
- ① Attract insects for Pollination
- ② Protect Sex organs



### ③ Andro Ceium

units → Stamen

function: formation of Pollen Grains





# ④ Gyno Ceium (♀)

unit: Carpel

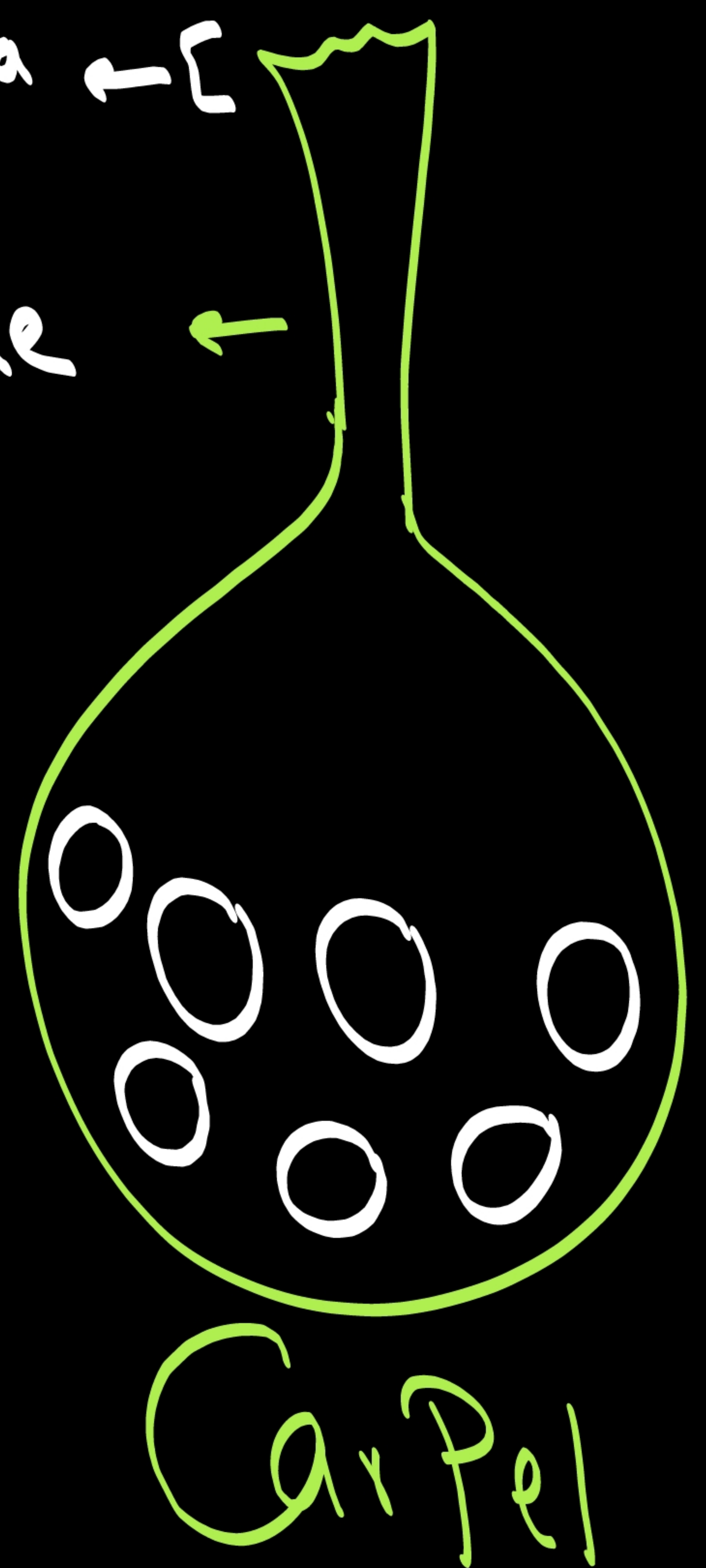
function:

formation of ovules

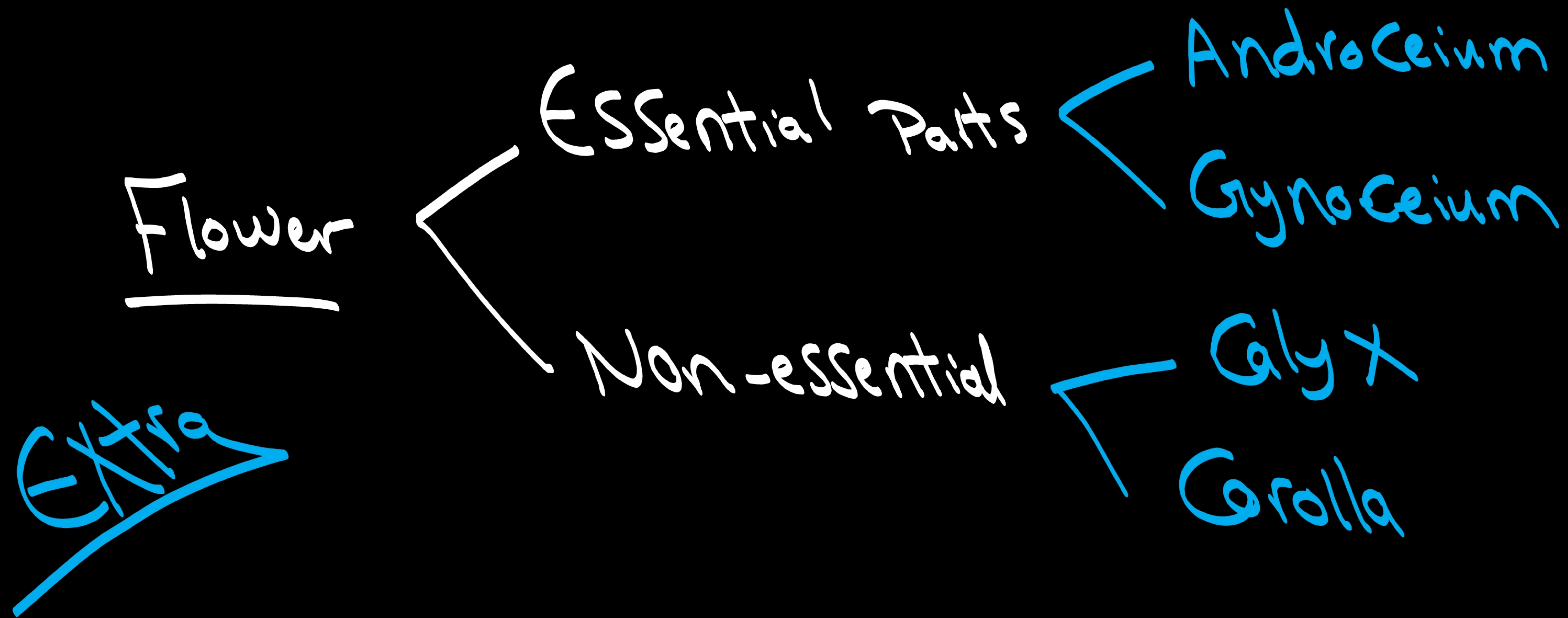
Sticky  
feathery → Stigma ①  
② Style



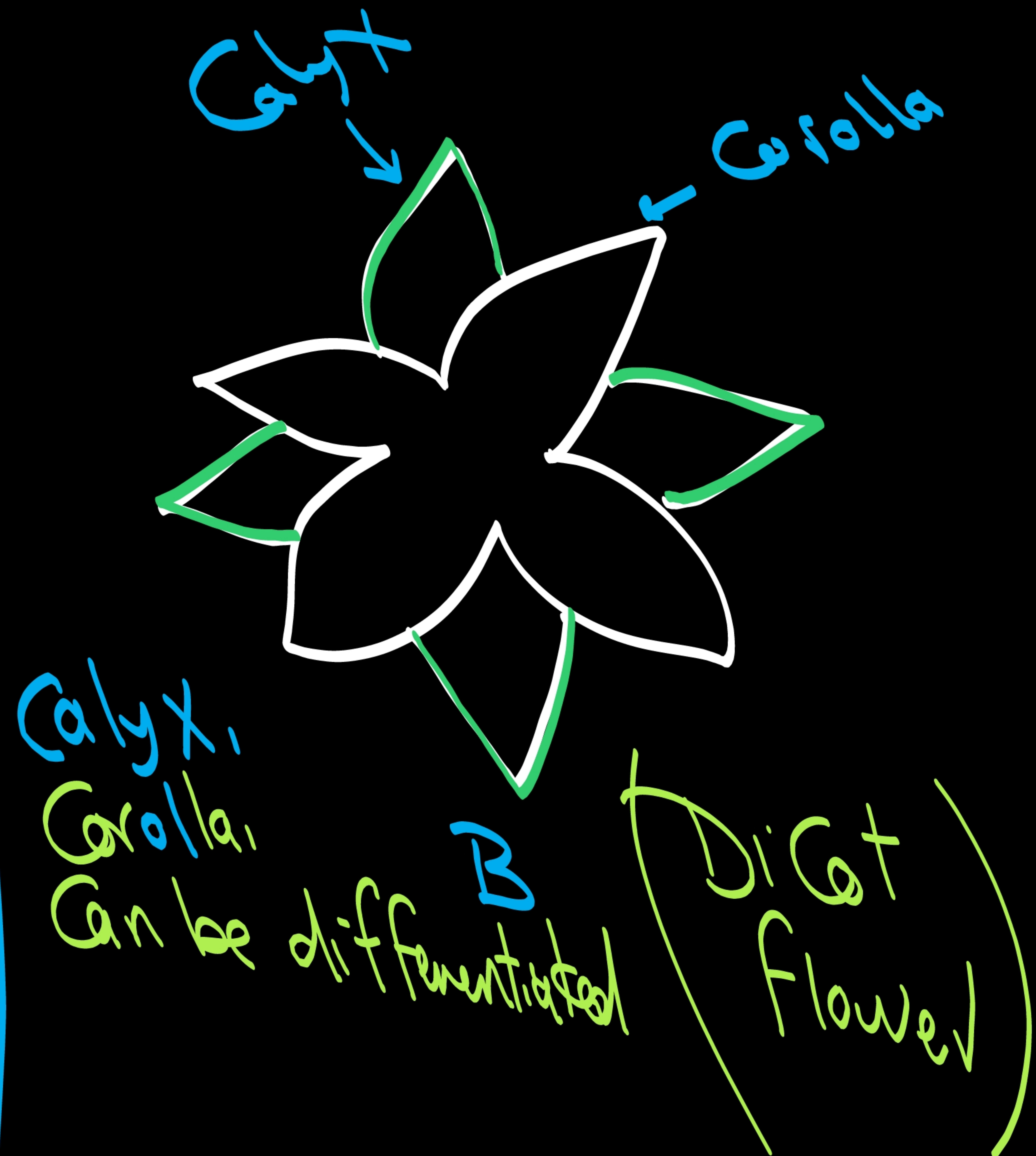
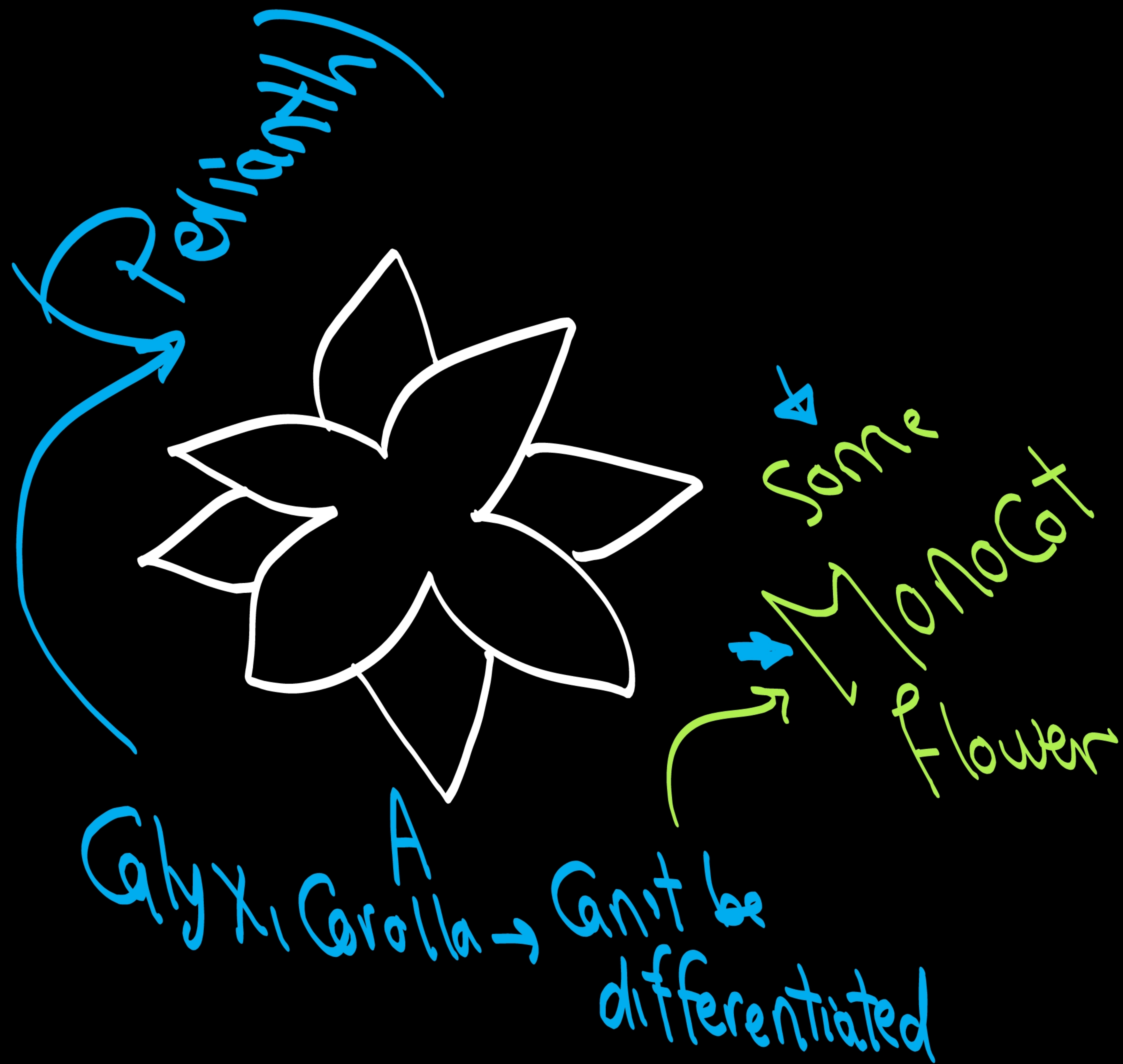
③ Ovary  
→  
one ovule  
or more













# Formation of Pollen Grains

Lily Flower

Anther

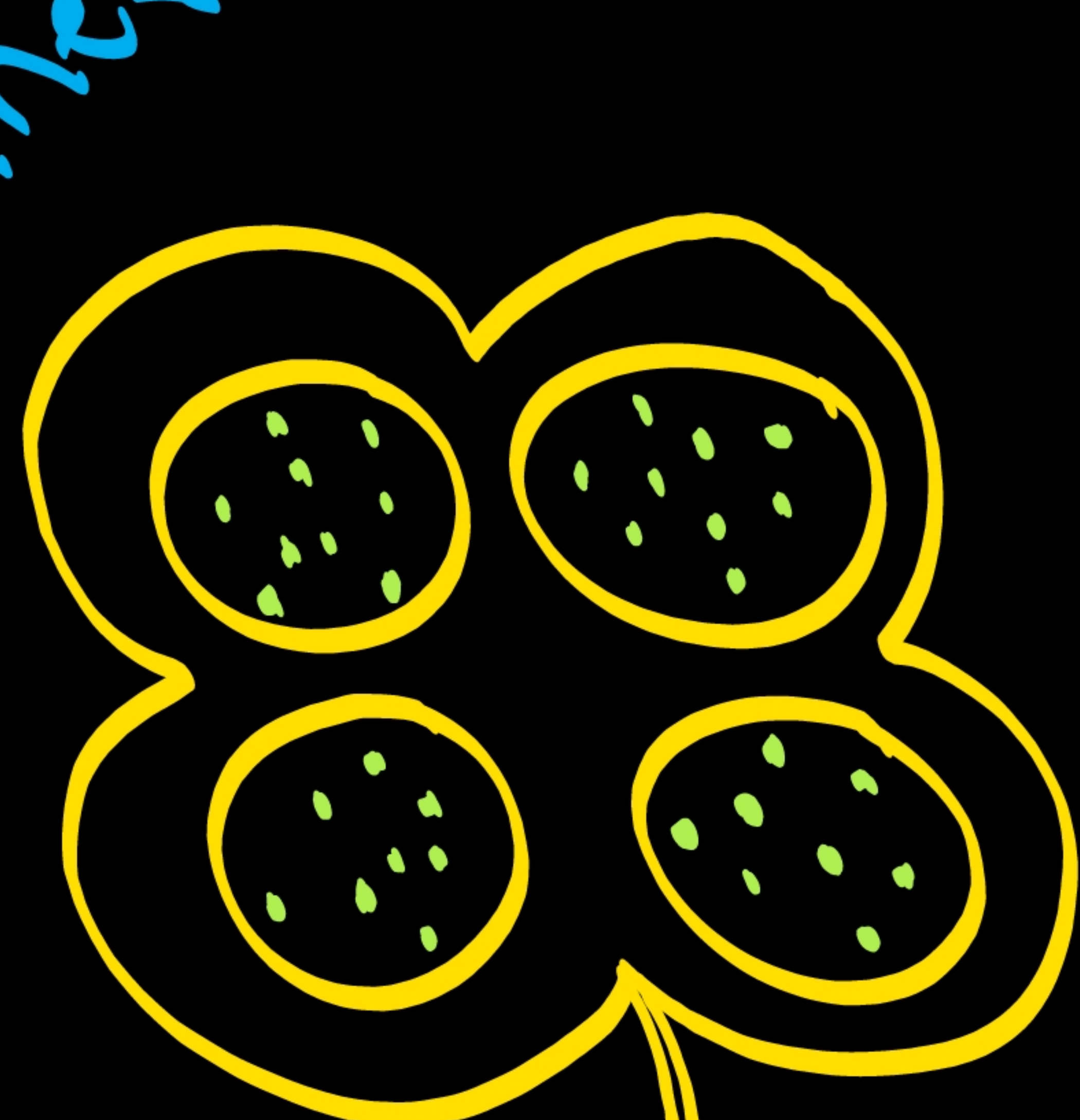
Filament

4 Pollen grain  
Sacs

Nuclear  
Mitosis

Meiosis  
(Cellular)

Spore mother  
cells  
large  
nucleated





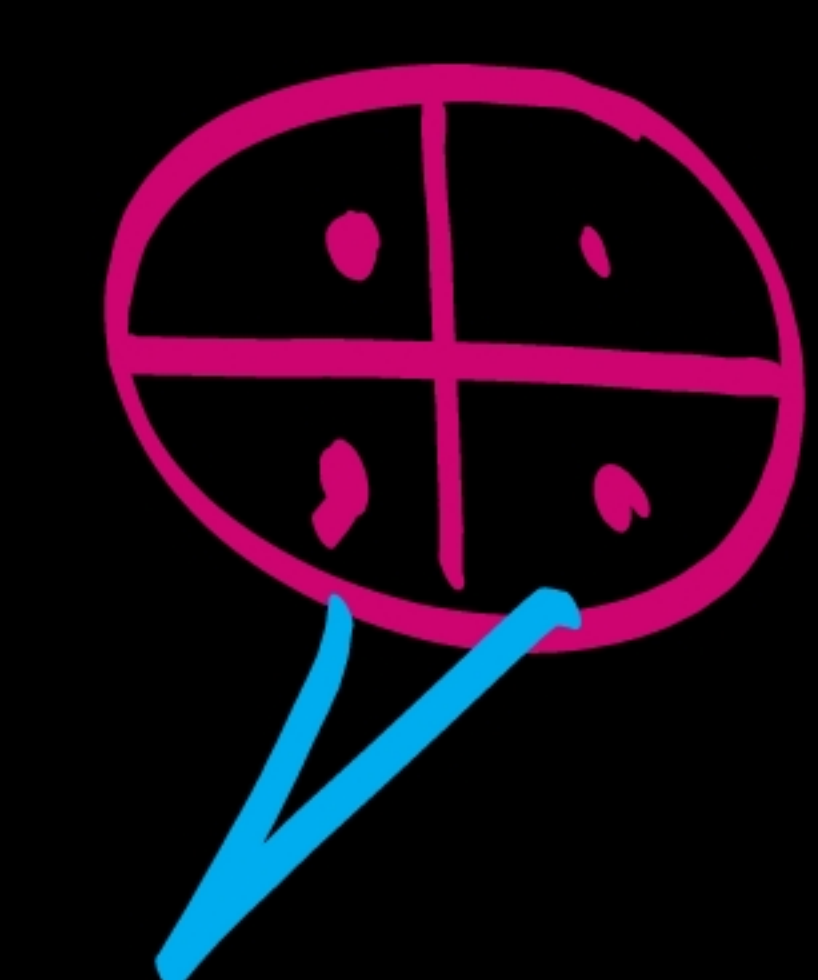
200

S.M.C  
(2n) = 14

meiosis I  
"Cellular"



Meiosis  
II



4 Microspores  
(n) = 7



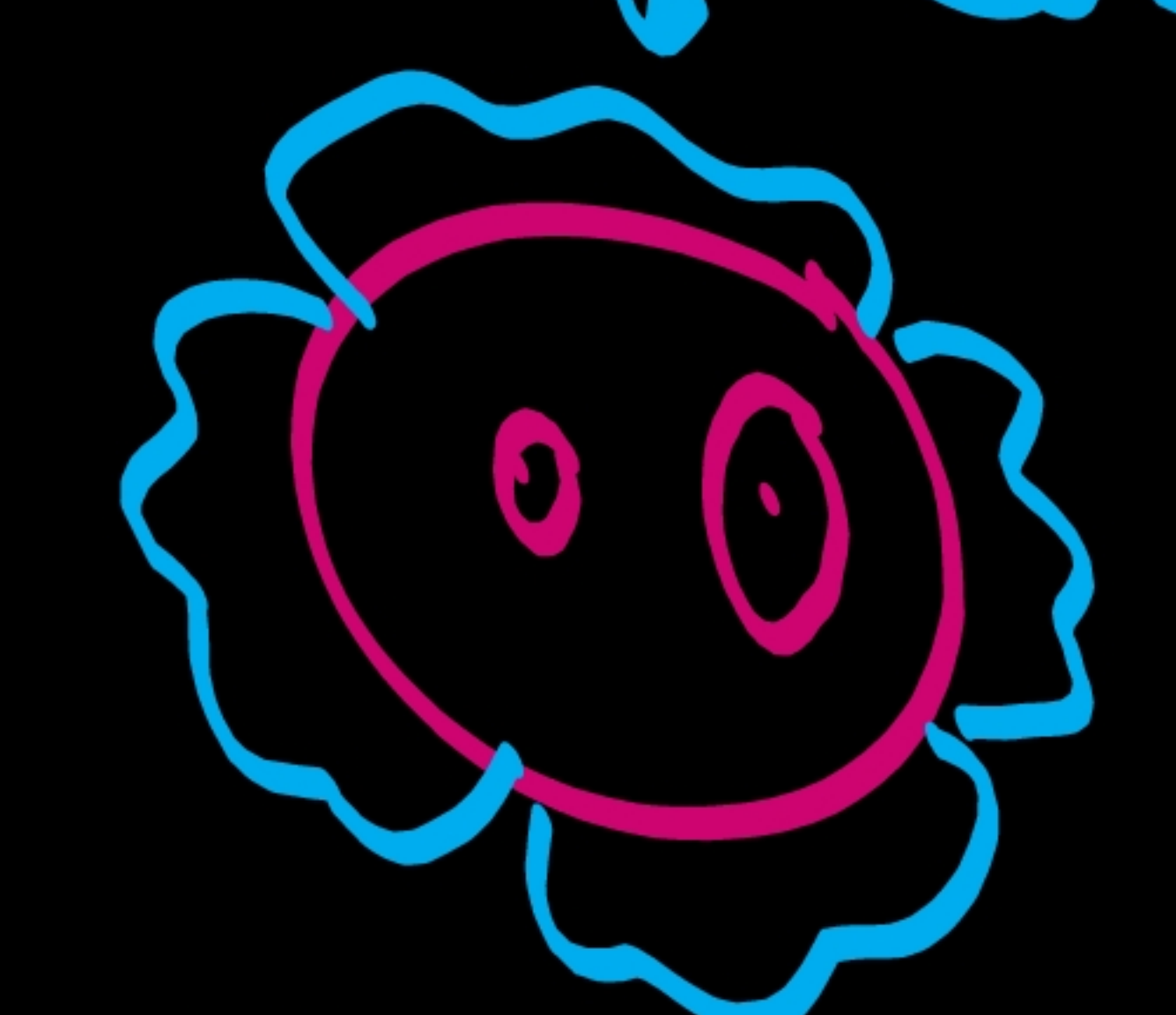
Nuclear  
mitosis



Tube  
nucleus  
(n) =  
(7)

Generative  
nucleus  
(n) = (7)

Thick  
Coat

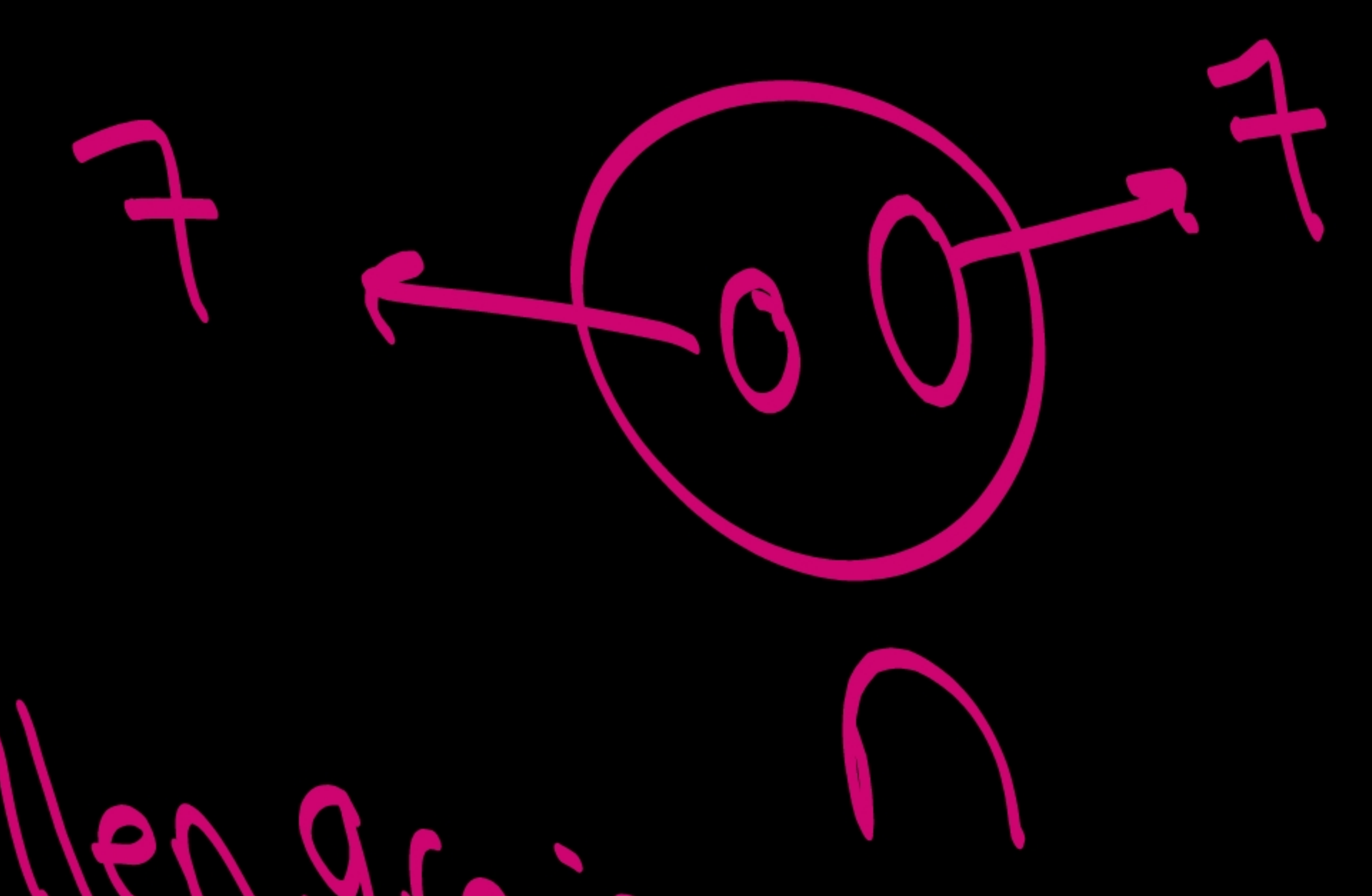
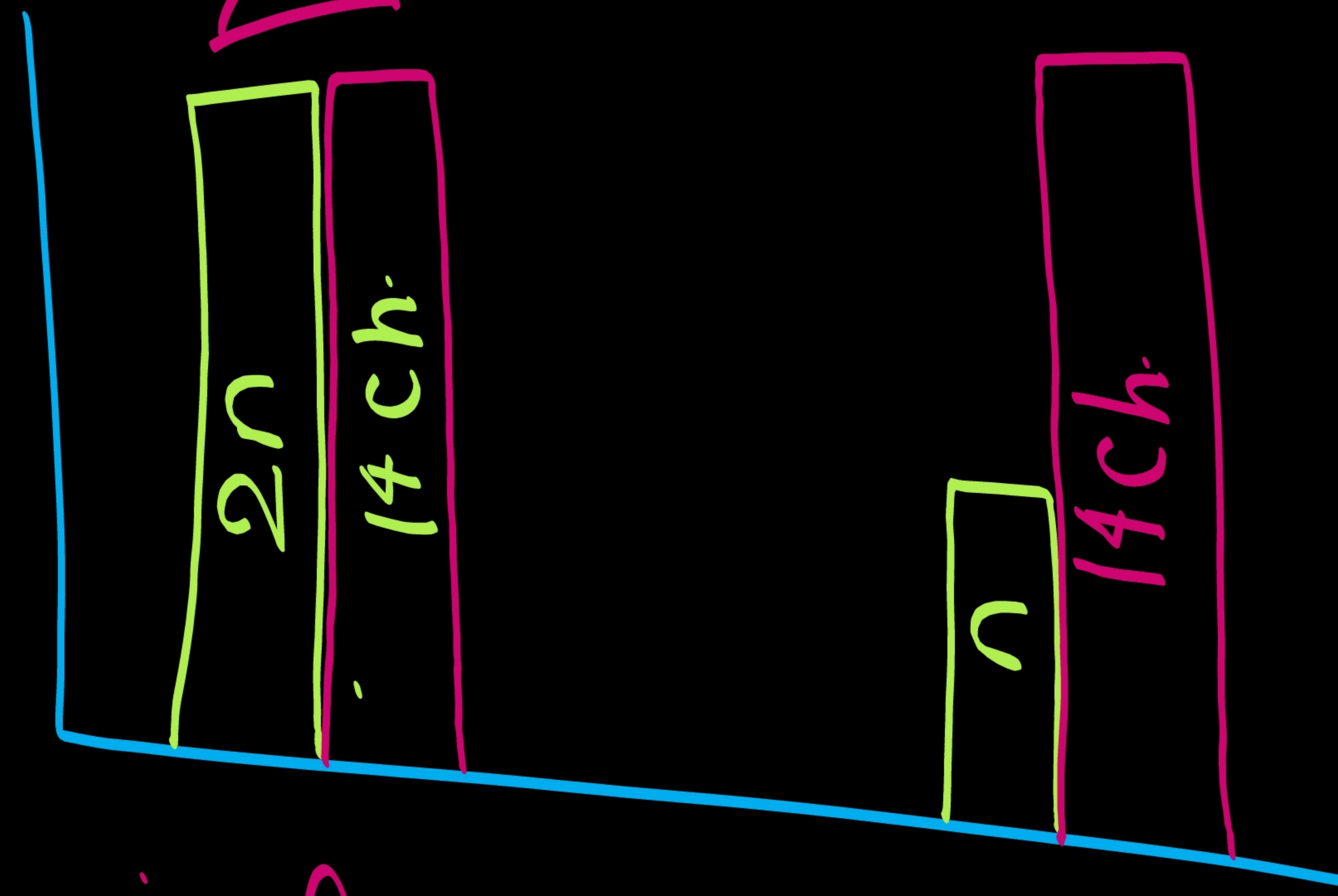


(n) Pollen Grain



S.M.C  
Somatic cell

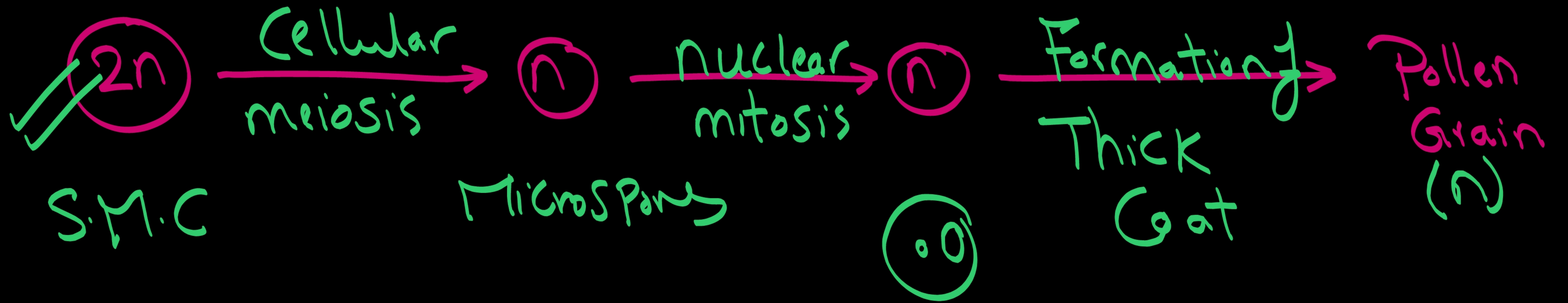
□ No. of chromosomes  
□ ch. sets



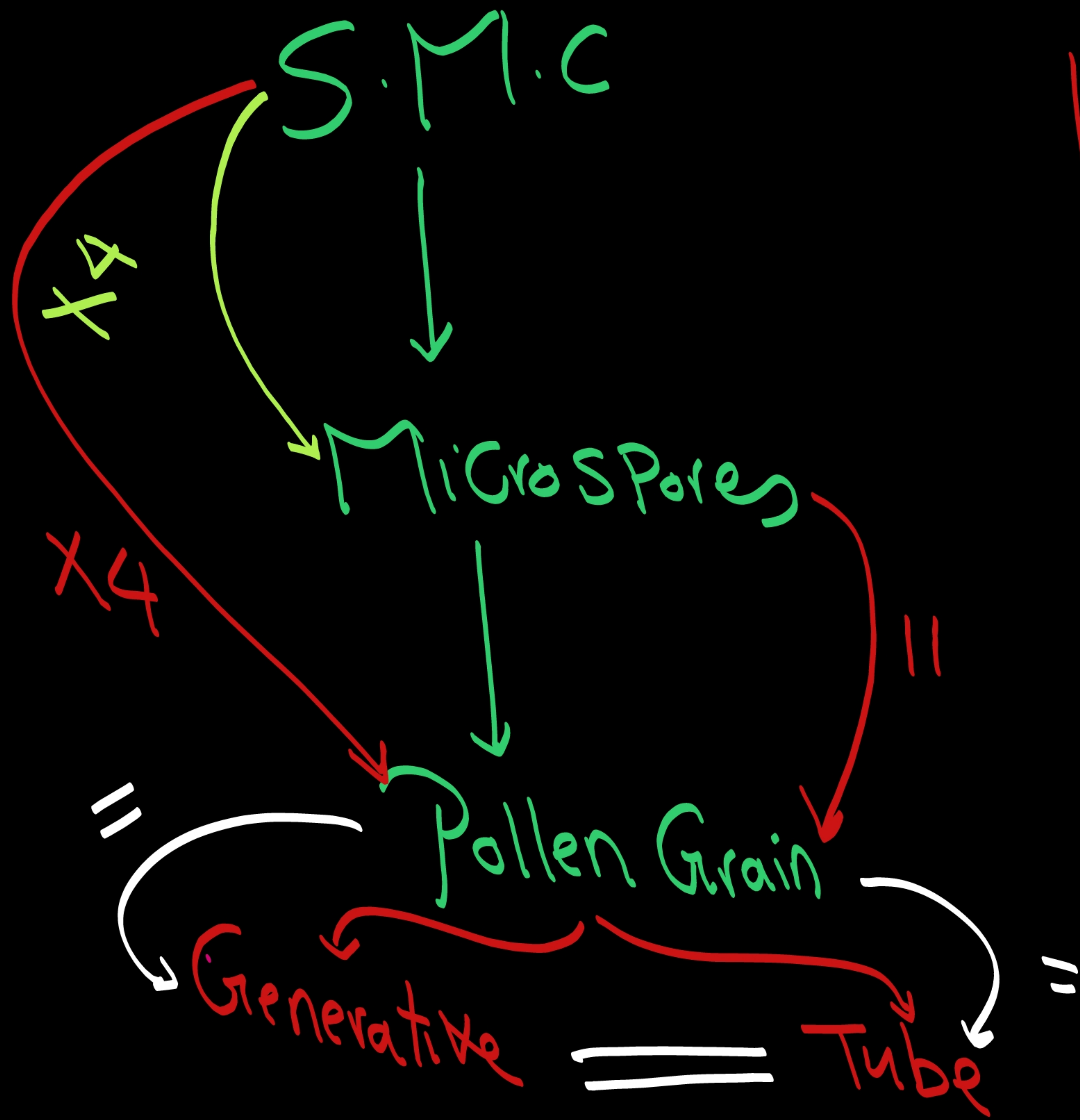
2 Cells  
from same  
Plant

A B → Pollen grain









20 S.M.C / Sac

- no. of microspores
- no. of Pollen grain
- Generative nuclei
- Tube nuclei

Sac

- 80 microspore
- 80 Pollen grain
- 80 Generative
- 80 Tube

In Anther

Anther

320

320

320

320

#